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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/760,334

01/20/2004

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PKI-291J

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09/13/2007

EXAMINER

HOOK, JAMES F

ART UNIT

PAPER NUMBER

3754

MAIL DATE

DELIVERY MODE

09/13/2007

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/760,334

Applicant(s)

WHITE, ANDREW J.

Examiner

James F. Hook

Art Unit

3754

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment: See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 26 February 2007 and 14 June 2007.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-58 is/are pending in the application.
- 4a) Of the above claim(s) 3, 4, 8, 15, 23, 25 and 27-37 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1, 2, 5-7, 9-14, 16-22, 24, 26, and 38-58 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____

DETAILED ACTION

Drawings

The drawings were received on February 26, 2007. These drawings are approved by the examiner.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1, 5, 6, 9-11, 16, 17, 19, 20, 22, 24, 38, 41, 42, 44, 46-49, 51, and 52 are rejected under 35 U.S.C. 102(b) as being anticipated by Marsh. The patent to Marsh discloses the recited hermetically sealed pressure balanced accumulator comprising a housing 11,12, a movable divider 15 formed as a pin connecting two pistons 16,17 which form hermetic seals via seals provided in grooves in the pistons to create four chambers, where chamber 21 is provided with fluid such as pressurized fluid from ambient conditions below a certain sea level, chamber 43 which fills from pressurized fluid from the hydraulic system, chamber 22 filled by a liquid such as sea water that is pressurized by the depth of the water creating pressure from the ambient water at that depth, and a chamber 44 which can be a vacuum, where the three chambers 21, 22, and 44 form balancing chambers.

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Claims 1, 5, 6, 9-13, 16, 17, 19, 20, 22, 24, 38, 41, 42, 44, 46-49, 51, and 52 are rejected under 35 U.S.C. 102(b) as being anticipated by Schneider. The patent to Schneider discloses the recited hermetically sealed pressure balanced accumulator comprising a housing 2, a movable divider 10 formed as a pin connecting two pistons 5,6 which form hermetic seals via seals provided in grooves in the pistons to create four chambers, where chamber 8 is a gas charged chamber, chamber 9 which fills from pressurized fluid from the hydraulic system, chamber 14 filled by low pressure fluid, and a chamber 7 which can be a vacuum, where the three chambers 7, 8, and 14 form balancing chambers.

Claims 1, 5, 6, 9-13, 16, 17, 19, 20, 22, 24, 38, 41, 42, 44, 46-49, 51, and 52 are rejected under 35 U.S.C. 102(b) as being anticipated by Deul. The patent to Deul discloses the recited hermetically sealed pressure balanced accumulator comprising a housing 34,38, a movable divider 52 formed as a pin connecting two pistons 48,50 which form hermetic seals via seals provided in grooves in the pistons to create four chambers, where chamber 42 is a gas charged chamber, chamber 46 which fills from pressurized fluid from the hydraulic system, chamber 44 filled by ambient pressure fluid, and a chamber 37 which can be a vacuum, where the three chambers 42, 44, and 37 form balancing chambers.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the

invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 2, 7, 26, 39, 40, 54, and 55 are rejected under 35 U.S.C. 103(a) as being unpatentable over Marsh, Schneider, or Deul in view of Thompson. The patents to Marsh, Schneider, and Deul disclose all of the recited structure with the exception of providing bellows structure to the pistons. The patent to Thompson discloses that it is old and well known in the art to provide an accumulator chamber provided with a piston 22 with a sealing structure in the form of a bellow structure 26,28 to create the chamber 20, where the use of the bellows structure can replace the need for seals on the piston which produce drag. It would have been obvious to one skilled in the art to modify the pistons in Marsh, Schneider, and Deul by substituting a sealing structure in the form of a bellows structure in place of the seals on the pistons as suggested by Thompson where such will reduce the drag on the pistons thereby improving the functioning of the accumulator and saving money by reducing drag.

Claims 2, 7, 26, 39, 40, and 53-58 are rejected under 35 U.S.C. 103(a) as being unpatentable over Marsh, Schneider, or Deul in view of Mainz and the teaching of Thompson. The patents to Marsh, Schneider, and Deul disclose all of the recited structure with the exception of providing bellows structure to the pistons. The patent to Mainz discloses that it is old and well known in the art to provide a chamber provided with dual pistons 11,12 connected by a bar 13 can be provided with a sealing structure in the form of a bellow structure 2,8 formed of welded seam metal bellows to create the chambers 4,17. The patent to Thompson discloses that it is old and well known in the art to provide pistons with bellows connected thereto to replace seal structures on the

pistons, thereby providing motivation to make the combination of Mainz with the references to Marsh, Schneider, and Deul. It would have been obvious to one skilled in the art to modify the pistons in Marsh, Schneider, and Deul by substituting a sealing structure in the form of a metal bellows structure with welded seams in place of the seals on the pistons as suggested by Mainz where such will reduce the drag on the pistons thereby improving the functioning of the accumulator and saving money by reducing drag as taught by Thompson.

Claims 14, 18, 21, 43, 45, and 50 are rejected under 35 U.S.C. 103(a) as being unpatentable over Schneider or Deul. The patents to Schneider and Deul disclose all of the recited structure with the exception of utilizing a pressurized liquid in the third chamber, providing the first chamber with a gas each of specific pressures. It is considered merely a choice of mechanical expedients to substitute one type of pressured fluid for another where it is old and well known in the art to substitute liquids and gases for one another in accumulators to achieve specific pressure requirements where such would only require routine skill in the art to modify the fluids used in Schneider and Deul to be either liquid or gas of any pressure as such would only require routine skill in the art to use routine experimentation to arrive at optimum working values.

Response to Arguments

Applicant's arguments filed February 26, 2007 and June 14, 2007 have been fully considered but they are not persuasive. With respect to the arguments directed at the

features of claims 53, and 56-58 such were persuasive but are now moot in light of the new rejection above. With respect to the arguments directed at Marsh, there is no claim language which precludes minor leakage, and such is not a prerequisite of hermetic sealing, especially when it is known that no seal is truly able to completely block all leakage, and with the open ended language of the claim, the reference can have additional structure and still meet the claim language, where if the reference to Marsh provides additional structure to take care of any leakage that occurs does not suggest that leakage has to occur, such can be there as a precaution only. With respect to the arguments directed at Schneider and Deul, it is argued that the seals set forth in these references are not hermetic, however, there is no suggestion as to why seals such as are set forth in these references are not hermetic seals when such are provided to prevent leakage, until the hermetic seals are actually defined structurally as bellows, such need only be seals capable of hermetic seal, and there is no suggestion why these seals would not be hermetic other than the statement that they are not. If applicant is referring to the fact that the seals are not of a bellows structure such is not required in the claims rejected under these references using 35 USC 102. With respect to the arguments directed at the rejection utilizing Thompson where the material is not considered to be hermetic after time and degradation, there is no time limit set forth in the claim language which the seal has to remain hermetic therefore the bellows structure of Thompson meets the claim language, where it is understood that metal bellows can fail as well and would no longer be hermetic either after time of use, therefore this argument is not persuasive with regards to the claims not requiring metal

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bellows which has been rejected under a different rejection above. There are no further arguments provided with respect to the rejection of claims under Schneider or Deul under 35 USC 103(a) with no modifying reference other than what was set forth above. The examiner does not feel an interview would be helpful at this time, however, if applicant wishes to talk further about possible modifications of the claims to overcome the current rejections applicants are invited to call the examiner to set up a mutual time for conducting an interview.

Conclusion

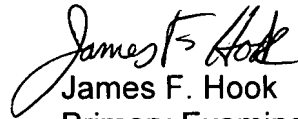
The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. The references to Dickie and Bernard disclosing state of the art bellows structures.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to James F. Hook whose telephone number is (571) 272-4903. The examiner can normally be reached on Monday to Wednesday, work at home Thursdays.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Kevin Shaver can be reached on (571) 272-4720. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.


James F. Hook
Primary Examiner
Art Unit 3754

JFH